

REMARKS

To confirm the status of the present application, Applicants' hereby acknowledge the Examiner's clarification that the Office Action mailed February 1, 2006 is a non-final Office Action. During a telephone conversation on February 8, 2006 with Applicants' attorney Richard Roberts, Jr., the Examiner acknowledged that the "This action is FINAL" box on the Office Action Summary form of the Office Action was checked in error, and the finality of the Office Action will be withdrawn. Applicants thank the Examiner for this correction.

The Examiner has rejected claims 8, 11, 12 and 15 under 35 U.S.C. 112, first paragraph, for lacking enablement for formula II. It is submitted that this ground of rejection has been overcome by the instant amendment. The claims have been amended to remove formula II from the claims. In view of the prior art, formulas I and III from claim 8 have been added to claim 1, and claim 8 has been canceled. Claim 11 is also canceled. The limitations of claim 12 have also been added to claim 1, and claim 12 is hereby canceled. It is respectfully submitted that the materials listed in former claim 12, namely polyamides 6T/66, 6I/6 and 6N/66, are properly enabled because they are specific nylons that may be blended with an aliphatic, crystallizable polyamide homopolymer and a semi-aromatic, amorphous polyamide. These materials are commercially available and methods of their production are known in the art. Additionally, claim 15 has been amended to eliminate any polyamide combinations from former claim 8 involving formula II, and the claim now depends from claim 1. In view of these amendments, it is submitted that the rejection has been overcome.

Claims 1, 4 and 8-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. It is respectfully submitted that the rejection has been overcome by the instant amendment.

Regarding claim 1, line 2 has been amended to clarify that the copolymer recited therein refers to a “polyamide copolymer”.

Regarding claim 1, line 3, the phrase “polyamide nanoclay” has been amended to recite the correct term, “polyamide nanocomposite”.

Regarding claim 8, line 3, and the definition of $x + y = 0$, the rejection is moot due to the cancellation of claim 8.

Regarding claim 9 and the definition of structure I from claim 1, the definition of component (ii) has been amended to delete the phrase “semi-aromatic”. Claim 1 is not broadened by this amendment because component (ii) is further limited by formulas (I) and (III) of former claim 8. The full scope of amended component (ii) is enabled and described in the specification by original formulas (I) and (III), and no new matter is presented.

Regarding the additional rejections of claims 8, 11, 12 and 15 in view of formula II, these rejections are moot due to the cancellation of formula II.

Regarding the rejections of claim 10, 12, 17 and 21-23, the claims have been amended to substitute the descriptive polymer names for the referenced abbreviations. Particularly, the claims have been amended to include the descriptive names of: PA-MXD6 (PA-poly(meta-xylylene adipamide)), PA-

MXD6/PXD6 (PA-poly(meta-xylylene adipamide)/poly(para-xylylene adipamide) copolymer), PA-MXDT (PA-poly(metaxylylene diamine terephthalamide)), PA-MXDT/MXD6 (PA- poly(metaxylylene diamine terephthalamide)/poly(meta-xylylene adipamide) copolymer), PA-6T/66 (poly(hexamethylene terephthalamide)/poly(hexamethylene adipamide) copolymer), PA-6T/6 (poly(hexamethylene terephthalamide)/polycaprolactam copolymer), PA-6N/66 (caprolactam-naphthalene dicarboxylic acid copolyamide/polyhexamethylene adipamide copolymer), PA-6I/6T (poly(hexamethylene isophthalamide)/poly(hexamethylene terephthalamide) copolymer), PA-6I (poly(hexamethylene isophthalamide)), PA-6/MXDI (polycaprolactam/poly(metaxylylene diamine isophthalamide) copolymer), PA-6/MXDT (polycaprolactam/poly(metaxylylene diamine terephthalamide) copolymer) and PA-TDAI (poly(tolylene diisophthalamide)). Accordingly, the rejections are overcome.

Regarding claim 16, the Examiner states that the term "substituted" is indefinite as to scope and meaning when describing a substituted or unsubstituted arylene. It is respectfully submitted that the term is not indefinite. As used in claim 16, the term "substituted" would be understood one skilled in the art to mean an arylene group, such as m- or p-phenylene, having R-groups attached thereto. The term "substituted arylene" has been previously found as acceptable claim language by the U.S. Patent and Trademark Office (see, for example, U.S. patents 7,034,174; 7,030,258; 7,018,994, and many others). Accordingly, it is respectfully submitted that claim 16 is not indefinite and the rejection should be withdrawn.

Regarding claim 17, it is submitted that the rejection has been overcome by making claim 17 dependent from claim 1. Claim 1 supports any semi-aromatic, amorphous polyamide.

Regarding the rejection of claims 18 and 19, claim 18 has been amended to clarify that the proportions of components (i), (ii) and (iii) described therein are based on the total weight of the polyamide composition. Claim 19 has been canceled.

Regarding the rejection of claims 20 and 23, these claims have been amended to remove the reference to a polyamide nanocomposite.

In view of the above, it is respectfully submitted that each of the rejections under 35 U.S.C. 112 have been overcome and should be withdrawn. Such action is requested.

The Examiner has rejected claims 1,4, 8-12 and 15-23 under 35 U.S.C. 102(b) or 35 U.S.C. 103(a) over U.S. patent 6,416,832 to Uehara et al. It is respectfully submitted that the rejection has been overcome by the instant amendment. Uehara et al. fails to teach or suggest the polyamide compositions as taught by Applicants. Particularly, Uehara et al. fails to teach or suggest the crystallizable polyamide component (ii) of the claims as amended, and fails to teach or suggest a polyamide composition that consists essentially of claimed components (i), (ii) and (iii).

Uehara et al. disclose packaging films and sheets having a layer formed from a polyamide composition comprising a nylon "copolymer c" that is composed of an aliphatic nylon copolymer component and an aromatic nylon copolymer component. Examples of nylon copolymers described by "copolymer c" include

nylon 6/12/MXD6, nylon 610/MXD6 and nylon 66/610/MXD6. At col. 5, Uehara et al. teach polyamide compositions that include their "copolymer c", including combinations of "copolymer c" together with nylon 6, an amorphous nylon and a polyolefin. Other polyamide compositions described by Uehara et al. include combinations of "copolymer c" with another different nylon copolymer, and an amorphous nylon and/or a polyolefin. Also taught are a combination of "copolymer c" with nylon 6, and a combination of "copolymer c" with nylon MXD6.

In view of the particular examples listed for "copolymer c", it has been recognized such may be described by Formula II from original claim 8 of the present application. Accordingly, the claims have been amended to eliminate Formula II from the claim scope. In accordance with the instant amendment, crystallizable polyamide component (ii) has been limited to having a repeating unit structure which comprises either Formula I) or Formula II) above. Component (ii) may also comprise specific polyamides PA-6T/66, PA6T/6 or PA-6N/66 which are not described by the applied reference. As amended, crystallizable polyamide component (ii) does not describe "copolymer c" of the applied reference, and the applied reference fails to teach or suggest the claimed invention as amended.

From Uehara, "copolymer c" contains a semi-aromatic repeat unit and an aliphatic repeat unit. For example, nylon 6,12/MXD6 wherein the 6,12 portion of the "copolymer c" is aliphatic and the MXD6 portion is semi-aromatic. As such, "copolymer c" is quite different than crystallizable polyamide component (ii), as amended, which is described by equations I and III. Particularly, in equation I, the repeat unit is semi-aromatic. The "copolymer c" of Uehara requires both a semi-aromatic repeating unit and an aliphatic repeating unit. For "copolymer c" to

match the polyamide equation I, it would require the addition of a wholly aliphatic repeating unit. In equation III, the repeat unit is again semi-aromatic, and for the same reasons "copolymer c" of Uehara does not meet the definition of crystallizable component (ii).

Applicants further respectfully assert that it would not be obvious to one skilled in the art to form the polyamide compositions of the invention in view of the disclosure of the applied reference. Where claimed subject matter has been rejected as obvious in view of prior art references, a proper analysis under 35 U.S.C. 103 requires consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composite or device or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out the claimed invention those of ordinary skill would have a reasonable expectation of success. See *In Re Dow Chemical Company* 837 Fed. 2d 469, 473, 5 USPQ 2d 1529, 1531 (Fed. Cir. 1988). Both the suggestions and the reasonable expectation of success must be found in the prior art, not in applicant's disclosure.

It is respectfully urged that it would not be obvious to one skilled in the art to incorporate a nylon formed by Formula I or Formula III, or one of the particular nylons II, as a substitute to "copolymer c" of Uehara. For example, in a preferred embodiment of the invention, the crystallizable polyamide component (ii) is nylon MXD6, which is described by Formula I of claim 1. However, Uehara et al. specifically teaches away from polyamide compositions including nylon MXD6 together with an aliphatic nylon homopolymer and an amorphous nylon. As stated on col. 4, lines 57-62, of Uehara, "[w]hen the ordinary nylon MXD6 is used in place of the specific copolymer nylon, the resulting film becomes poor in

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softness and stretchability, is too hard to achieve good suitability for Shirring as a casing film for packaging a pasty substance such as sausage, and is also not very improved in dimensional stability". The reference specifically declares that only the particular materials falling within the definition of their "copolymer c" achieves a product having properties which are suitable for their composition. In view of this teaching away, it is respectfully submitted that it would not be obvious to one skilled in the art to substitute a nylon described by formulas I or III above, or the selected nylons II, with nylon MXD6 with a reasonable expectation of success.

The Examiner further directs the Applicants to Comparative Example 3, which describes a polyamide composition including a combination of nylon 6, an amorphous nylon, and nylon MXD6, together with polyethylene and ethylene acrylic acid copolymer. However, it is respectfully submitted that Uehara et al. fails to teach or suggest a composition consisting essentially of a slow crystallizing blend of (i) an aliphatic, crystallizable polyamide homopolymer, polyamide or copolymer or polyamide nanocomposite; (ii) a crystallizable polyamide having a repeating unit structure which comprises either I) $-\text{HN}(\text{CH}_2)_n\text{Ar}(\text{CH}_2)_n\text{NHCO-Z-CO}-$; or III) $-\text{HN}(\text{CH}_2)_n\text{ArCO}-$; or a combination thereof; wherein $n = 1$ to 3 ; wherein $\text{Ar} =$ an arylene group; and wherein $Z =$ an alkylene group of C_4 to C_8 ; or comprises II) PA-poly(hexamethylene terephthalamide)/poly(hexamethylene adipamide) copolymer, PA-poly(hexamethylene terephthalamide)/polycaprolactam copolymer or PA-caprolactam-naphthalene dicarboxylic acid copolyamide/poly(hexamethylene adipamide) copolymer; and (iii) a semi-aromatic, amorphous polyamide. Particularly, the composition of Comparative Example 3 additionally requires the addition of polyethylene and ethylene acrylic acid. Such is not within the scope of

the amended claims. The applied reference fails to teach or suggest polyamide compositions consisting essentially of a nylon homopolymer, an amorphous nylon and a nylon as described by claimed component (ii). It is urged that one skilled in the art would not be imbued with an inspiration to convert the polyamides of claimed component (ii) to within the scope of "copolymer c" of Uehara, et al. upon a reading of the applied reference.

The undersigned respectfully requests re-examination of this application and believes it is now in condition for allowance. Such action is requested. If the Examiner believes there is any matter which prevents allowance of the present application, it is requested that the undersigned be contacted to arrange for an interview which may expedite prosecution.

Respectfully submitted,


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I hereby certify that this paper is being facsimile transmitted to the United States Patent and Trademark Office (FAX No. (571) 273-8300) on May 1, 2006.


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